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Life in a "Seashell"

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Could one love the sea so much that they would live in a seashell? The answer is "Yes". That seems insane, but the deficit of the sense of closeness and unity with nature more and more necessitates people to realize their sometimes strange life ideas in architecture, be it a house in the form of animals, plants and even the human or its individual parts. Such interesting way of expression was named "organic architecture".

Organic architecture takes its springs from the end of the XIX and the beginning of the XX centuries. The basics of this art way were established by L. Sullivan, F.L Wright, A. Gaudi, R. Steiner, H. Haring and others. Some of the pioneers of the modern movement, such as F.L. Wright and R. Steiner, had already brought about this revival in the fifties and sixties. They transformed its initially rigid geometrical character into a livelier, organic direction. [1]

They explain it in losing contact between human, natural environment and society, dehumanization of human beings in deharmonization of industrialized urban environment.

Rudolf Steiner said: "The spiritual aspect of creating bionic forms associated with the attempt to understand the human mission. In accordance with it architecture is treated as a "place" which discloses the meaning of human existence". [1]

During the last decades of the twentieth century organic architecture experienced a vigorous revival. A new generation of architects inspired by the works of predecessors wed their ideas with local building traditions, new techniques
and their own creative impulses; they seek to realize the unusual design principles of "green" building. In this way, a new diversity of nonstandard

approaches and unique forms of expression modern architecture style have originated worldwide and got a name "bio-tech" or "architectural bionics". Expression of designs achieves through borrowing natural forms. Bionics is often contrasted with the direction "high-tech". Elements of the bio-tech buildings are characteristic to German expressionism 20's of the XX century, and structural expressionism 60's.

More often public buildings or private houses are designed in this style. For example, the City of Arts and Sciences in Valencia, the National Space Centre in the United Kingdom, London "Cucumber", the Milwaukee Art Museum. Natural forms taken as a basis, but little resemble living form, converted to an ultra-trendy style. But many architects achieve maximum similarity with the original natural forms using materials like natural structures (honeycomb, bubbles, fibers, spider web) focusing more on their surreal component.

If set eyes on the Hundertwasserhaus in Vienna or the Gaudi houses in Barcelona, the border of reality distorted and completely blurred as if you see a dream comes true. This is an architectural style in which appreciates the true spirit of surrealism. As I have always been inspired by the original approach to the creation of art and architecture works I decided to ask the question whether in the Sverdlovsk region, in particular in Yekaterinburg, bio-tech buildings with surreal responses?

One of such unique architectural modern design was developed by "ArchStudia Vega" founded in 1997 in Ekaterinburg by the architect Gaidukov Y.A. The project named "Seashell House" is in the top of 10 most unusual houses situated in Russia.

The private dwelling house owned by itself Gaidukov Yuri was building from 2006 to 2011. It is located in the Tavatuy community in the Sverdlovsk region near the lake with the same name, in the 40-50 km from Ekaterinburg. House area is 228 square meters.

The idea of creating the shell-house was grown up because of the architect's big love to the sea and the underwater world in all. It was based on the shape of seashell – "cassis cornuta". «Cassis» translated from the Latin means "hat". Round shaped shell with textured surface means that is covered with small fossa and convex protuberances.

The idea of applying bionic, biomorphic forms makes the illusion of atrium space inside the building. Expressionism shades are felt in that creation because the main architect's idea was probably not the reproduction of reality, but the expression his emotional state in the dynamic "organic" forms. Surprisingly, the building isn't divided on the roof and the facades.

Both outside and inside the house has no straight lines and corners, only smooth contours, the wrong lines in conjunction with unusual colors. The walls are similar with living membranes. Due to rhythmic game of changing concave and convex surfaces of the walls seems that the building breathes.

The main construction material was air-placed concrete with reinforcement. In its turn, the floors and the stairs are made of reinforced concrete. Combined roof is made with a conversion coating which prevents the possibility of corrosion. Fences of stairs and atrium look like 10mm curved toughened glass that is immured in the concrete floors. [7]

With regard to engineering systems, the house has a gas boiler for hot water heating. It is combined with a cooling system (chiller): there is distributing pipes in the floor and exterior walls. In winter, the heated water is supplied, so the walls and floor remain warm, and summer served chilled water with automatic temperature control in the rooms. Mechanical ventilation for supply and exhaust assembled with open flexible pipes on the interior walls and ceilings which additionally plastered with air-placed concrete. [7]

A distinctive feature of the house is the natural light. On the whole surface were projected bay windows reminding the natural shell's ledges and a 7-meter high stained glass window, so space is lighted in the morning until late at night, also from an economic point of view consumption of electricity reduced several times.

It seems that interior cut from an integral piece of material: the walls, roof, and floors are all absorbed in one shape without any parting lines.

The house conditionally divided into three levels, each level represents floor of ocean, water surface and sky. Bottom is more like a private hive or office space, where you can see library-hall, cabinet "grotto" and living room with toilet. On the second – living room, dining room, kitchen, toilet and entrance to the house. Bedroom with bathroom and dressing room is situated on the top level. The ceiling looks like wavy glass illuminator. The most colorful detail of living room is a pyramid shaped fireplace. All three levels are linked with "coral" curved stairs. [6,7]

The building reminds "living" organism, interior objects are represented in the form of corals, shells and other inhabitants of the underwater world; one part of the house grows up from another as the metamorphosis of single principle. J.W. Goethe once pointed to the principle of metamorphosis as the basis of existence and development of living organisms.

The organic nature of the building is created by the integration between technical elements of the building (design, engineering) and aesthetic (decorative element, architectural detail, shape) like the unity of aesthetics and functionality that exists in nature.

Gaidukov Yuri notes that the construction of such a unique building has caused some difficulties related to the selection of individual sizes, specific and non-standard pieces of furniture and architectural solutions.

The special proud author gives to the toilets and bathroom which laid out with glass mosaic of 32 colors and ceramic tiles in such way that creates the illusion of an underwater kingdom. [7]

The construction, decoration and beautification of the house were made by construction organization "Atomstroykompleks" including some furniture for the kitchen and the bedroom, entrance and interior doors, glass enclosure, curved glass ceiling, and even stained glass. [7]

Amazingly, similar homes shells all over the world can be counted on the fingers of one hand. Furthermore two of the most striking buildings are located in Mexico. Conch Shell House is located 13 km from the resort of Mexico, Cancun. It belongs to the famous Mexican surrealist painter Octavio Ocampo who in collaboration with his brother, the architect Eduardo, personally engaged the development of this project. Another architectural creation called Nautilus is located in the Naucalpan de Juárez. The Designer and the architect of this construction is Javier Senosian. For his attachment to the natural shapes and forms he is often called a "bioorganic" architect.

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Simanov-Makarovs'Mill

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Mills are very common in Russia and around the world. Mills had been used to grind a variety of materials: stone, hardwood and plastics, grain, etc. for a long time. But exactly flour mills have caught my attention.

Wind mills and water mills prevailed in Russia before the invention of steam engines. They had simple shredding mechanisms and used water and wind energy. Grain was milled using millstone in water mills and wind mills, millstones in turn were set in motion by a water wheel (water mills) or wind blades of special design (wind mills). These mills are considered to be